

INDIRA TECHNICAL INSTITUTE NASHIK

CERTIFICATE COURSE CAD / CAM PRO-E [CC PRO-E]

1. **INTRODUCTION**

Introduction to Computer Aided Designing for Pro-E. Sketching environment of Pro-E. 2D sketching Tools, parametric concepts, Constraints and Dimensional relationships

2. **Pro-Engineer User Interface.**

Menu bar, Tool bar, File Management, View display, Model display, Model tree, Datum Display context-sensitive, working directory, View orientation, Dynamic viewing, Unit setting, material defining, Geometric Dimensioning, Naming feature, parent-child relationship, modal analysis, plotting in Pro-E config. The printer Defining map keys, Layers, selecting features & Entities.

3. **Creating a Sketch.**

Fundamentals of sketching, sketching elements, sketch plane, grid options, Constraining, line, Arc, Circle, Rectangle, Fillet, Centre line, Selection Tool, using mouse to sketch, Spines, Text, Elliptical fillet, Dimensioning, Linear, Radial Angular, perimeter, ordinate Reference modifying dimensions sketcher relations. Sketcher Tutorial. Creating a new object in sketch mode.

4. **Extruding / Revolve, Modifying & Redefining Features.**

Steps for creating a new part, protrusions, cuts, & slots, Extrude direction, Revolve direction, Depth options, material side creating extruded feature, Features based modeling, parent-child relationships, creating revolve feature, Datum planes in pro-E, creating datum planes
Modifying features – Dimensions modification, Redefining feature.
Extrude Tutorial – Creating the parts of Extrude & Revolve.

5. **Feature Construction Tools.**

The whole option- placement, Depth, Linear, Radial, Diametric & coaxial holes
Shelled parts - Thicken the part.

Ribs - Creating ribs.

Drafts - Neutral planes, hinge, curves, No split draft.

Rounds - Creating a round, Radii options.

Chamfer - Creating chamfer & options.

Patterned - Pattern option, Dimensions variation.

Tutorial - Hole, shell, Rib, Draft, Round, Chamfer & pattern.

6. **Feature Manipulation Tools.**

Model tree, Edit, Feature definition, suppressing, inserting, Reordering, Regenerating feature, Grouping features, copying features, copy, mirror, Rotate, Translate, user defined feature, UDF menu Relations, Family table, cross section

Tutorials –

7. **Advance modeling Techniques.**

Sweep & various section sweep fundamentals, sweep & various sweep options – parallel, Rotational & General.
Sweep Blend, Helical sweep, spring feature, Blend section to surfaces, Blend Between surface, Toroidal etc.

8. **Assembly Modeling**

Important terms related to assembly mode, creating Top-down assembly, creating Bottom-up assembly, placement constraints, Mate, insert, align, tangent etc.

9. **Surface Modeling**

Introduction to surface, Creating Extrude, Revolve, Sweep, Blended, swept Blend, Helical sweep surface & variable section sweep.

Copying surface, mirror, move, merge, trim, fill surface, intersect, offset, Thickness, creating round & chamfer.

Tutorial.

10. **Creating Drawing**

Drawing fundamental, Drawing setup file, Sheet formats, creating drawing creating general view, orthographic views, sectional views, auxiliary views, Dimensioning & Tolerance, line style & fonts, Creating BOM & Ballons, Creating notes.

SCHEME OF EXAMINATION.

Theory	: One	Duration	: 3 Hrs.	Marks	: 75
Practical	: One	Duration	: 1 Hrs	Marks	: 100
Oral	-:			Marks	: 25
Total -:					- 200

Guidelines for paper setter.

Q.1 Compulsory & objective type 15 marks each.

Q.2 to Q.7 candidate has to solve any four one of these six 15 Marks each.

Out of these 6 questions at least 2 questions should be practical based.

Recommended Text.

(1) Pro-Engineer - By David S. Kelley Purdue University USA.

(2) Pro-Engineer – By Sham Tikoo Purdue University USA.

